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1 Resume

1.1 Degrees attained

- **Doctor of Philosophy** Computer Science Engineering. University of Illinois at Chicago (UIC), Chicago, IL. July 2007. Dissertation: “Dynallax: Dynamic Parallax Barrier Autostereoscopic Display.”
- **Master of Science** Computer Science Engineering. University of Illinois at Chicago (UIC), Chicago, IL. December 2003. Thesis: “Scientific Visualization of N-Dimensional Attainable Regions.”
- **Bachelor of Science** Computer Science Engineering. University of Illinois at Chicago (UIC), Chicago, IL. June 1987.

1.2 Positions held

- **Argonne National Laboratory** Argonne, IL, 2015 - present. Computer scientist.
- **Argonne National Laboratory** Argonne, IL, 2010 - 2015. Assistant computer scientist.
- **Argonne National Laboratory** Argonne, IL, 2007 - 2010. Postdoctoral appointee.
- **Northwestern University Argonne National Laboratory Institute of Science and Engineering** Evanston, IL, 2014 - present. Fellow.
- **University of Chicago Computation Institute** Chicago, IL, 2010 - present. Fellow.
- **University of Illinois at Chicago** Chicago, IL, 2009 - present. Adjunct assistant professor.
- **Electronic Visualization Laboratory** Chicago, IL, 2003 - 2007. Research assistant.
- **Illinois Advanced Design Inc.** Bridgeview, IL, 1981 - 2007. Director.

1.3 Honors and awards

- Honorable Mention Paper, IEEE 2016 Symposium on Large Data Analysis and Visualization, LDAV’16. Morozov and Peterka: Block-Parallel Data Analysis with DIY2. Baltimore, MD, 2016.
- Best Paper, IEEE Cluster 2016 Conference. Rangel, Li, Habib, Peterka, Agrawal, Liao, Choudhary: Parallel DTFE Surface Density Field Reconstruction. Taipei, Taiwan, 2016.
- Best Poster, IEEE 2013 Symposium on Large Data Analysis and Visualization, LDAV’13, Chaudhuri, Shen, Peterka: Efficient Range Distribution Query in Large-Scale Scientific Data, Atlanta, GA, 2013.
- Gordon Bell Finalist, SC12, Habib, Morozov, Finkel, Pope, Heitmann, Kumaran, Peterka, Insley, Daniel, Fasel, Frontiere, Lukic: The Universe at Extreme Scale: Multi-Petaflop Sky Simulation on the BG/Q, Salt Lake, UT, 2012
- Best Student Paper, SC11, Kendall, Allen, Peterka, Huang, Erickson: Simplified Parallel Domain Traversal, Seattle, WA, 2011.
- Best Paper, Eurographics Parallel Graphics and Visualization Symposium, Parallel Volume Rendering on the IBM Blue Gene/P, Crete, Greece, 2008.

- Best Paper, IEEE VR 2007 Conference, Dynallax: Solid State Dynamic Parallax Barrier Autostereoscopic VR Display, Charlotte, NC, 2007.
- University Fellowship Award winner, UIC, 2006
- Best Poster, Industrial Advisory Board Graduate Student Poster Mini-Expo, Multi-Camera Head Tracking for the Varrier Autostereo Display, UIC, 2005.
- Bell Honor Award, highest grade point average, College of Engineering graduating class, UIC, 1987
- James Scholar full scholarship winner, UIC, 1983-1987

1.4 Membership in professional societies

- Member IEEE since 2014

2 Professional Activities

2.1 ANL

- Sponsor summer internships, 2009-present
- Volunteer ANL Open House, 2009
- Volunteer ANL Energy Showcase, 2012
- Founding board member Postdoctoral Society of Argonne (PSA), April 2008 - June 2010
- Volunteer Science Careers in Search of Women (SCSW) Conference, 2009-2011
- Member MCS Awards Committee, 2010 - 2013
- Postdoc mentor, 2011 - present
- MCS mentoring program coordinator, 2013 - present
- MCS Big Data Strategic Committee, 2012 - present
- MCS Leadership Committee, 2014 - present
- MCS Hiring Committee, 2014- present
- LDRD proposal reviews, 2010 - present

2.2 DOE

- Scientific Workflows Workshop co-organizer, April 2015, Rockville, MD
- Data Council member, September 2014, Rockville, MD
- Various proposal reviews, 2010 - present

2.3 Professional community

- SC 2016 technical program committee member
- IEEE Vis 2016 organizing committee member
- EuroPar 2016 organizing committee member
- LDAV 2016 program committee member
- EGPGV 2015 international program committee member
- SC 2015 technical program committee member
- IEEE Vis 2015 fast forward co-chair
- IEEE SciVis 2015 international program committee member
- IEEE Cluster 2015 data storage, analysis and visualization area co-chair
- ICPP 2014 technical program committee member
- EGPGV 2014 international program committee member
- SC 2014 technical program committee member
- EGPGV 2013 technical program committee member
- SC 2013 technical program committee member
- UltraVis 2013 technical program committee member
- SC 2012 program committee member
- SC 2012 ACM student research competition posters judge
- CScADS Workshop on Data Analysis and Visualization, 2008-2012 co-organizer
- ISVC 2011 program committee member
- Paper reviews: Pacific Visualization, IEEE International Parallel and Distributed Processing Symposium, Eurovis, IS&T / SPIE Stereoscopic Displays & Applications, IEEE Visualization, ACM SIGGRAPH, ACM SIGGRAPH-Asia, IEEE-ACM Supercomputing, Eurographics Parallel Graphics and Visualization, International Conference on Parallel Processing, IEEE Transactions on Visualization and Computer Graphics, IEEE Computer Graphics & Applications
- Graduate student oversight: UIC 2009-2011, OSU 2009-2015, UTK 2009-2012, Rutgers 2012, Michigan Tech. 2013-2014, NCSU 2014, UCSC 2013-2015
- Dissertation committee member: Wesley Kendall (UTK 2010), Yiwen Sun (UIC 2011), Abon Chaudhuri (OSU 2013) , Brad Hollister (UCSC current), Yi Gu (UND current), Matthieu Dreher (INRIA-Grenoble 2015)

3 Research Products

3.1 Books authored

N/A

3.2 Books edited

N/A

3.3 Book chapters

- Peterka, T., Ma, K.-L. Parallel Image Compositing Methods. Book chapter in High Performance Visualization. Bethel, E. W., Childs, H., Hansen, C., editors.
- Pugmire, D., Garth, C., Childs, H., Peterka, T. Parallel Integral Curves. Book chapter in High Performance Visualization. Bethel, E. W., Childs, H., Hansen, C., editors.
- Leigh, J., Johnson, A., Renambot, L., Vishwanath, V., Peterka, T., Schwarz, N: Visualization of Large-Scale Distributed Data. Book chapter in Data Intensive Distributed Computing: Challenges and Solutions for Large-scale Information Management. Kosar, T., editor. Information Science Publishing, August 2010.

3.4 Refereed journal articles

2016

- Dorier, M., Antoniu, G., Cappello, F., Snir, M., Sisneros, R., Yildiz, O. Ibrahim, S., Peterka, T., Orf, L.: Damaris: Addressing Performance Variability in Data Management for Post-Petascale Simulations. To appear in ACM ToPC journal, 2016.
- Phillips, C., Guo, H., Peterka, T., Karpeyev, D., Glatz, A.: Tracking Vortices in Superconductors: Extracting Singularities from a Discretized Complex Scalar Field Evolving in Time. Physical Review E, Vol. 93, No. 2, 2016.
- Peterka, T., Croubois, H., Li, N., Rangel, S., Cappello, F.: Self-Adaptive Density Estimation of Particle Data. SIAM Journal on Scientific Computing SISC Special Section on CSE15: Software and Big Data, 2016.

2015

- Deng, J., Vine, D., Nashed, Y., Chen, S., Phillips, N., Peterka, T., Ross, R., Vogt, S. Jacobsen, C.: Continuous Motion Scan Ptychography: Characterization for Increased Speed in Coherent X-Ray Imaging. Optics Express Journal, 2015.
- Deng, J., Vine, D., Chen, S., Nashed, Y., Jin, Q., Phillips, N., Peterka, T., Ross, R., Vogt, S. Jacobsen, C.: Nanoscale Structure and Chemistry: Simultaneous Cryo X-ray Ptychographic and Fluorescence Microscopy of Marine Algae. Proceedings of the National Academy of Sciences, 2015.
- Phatak, C., Nashed, Y., Peterka, T.: Towards Multiresolution Phase Retrieval using Electron Ptychography. Microscopy and Microanalysis, 21, 2015.
- Habib, S., Pope, A., Finkel, H., Frontiere, N., Heitmann, K., Daniel, D., Fasel, P., Morozov, V., Zagaris, G., Peterka, T., Vishwanath, V., Lukic, Z., Sehrish, S., Liao, W.-K.: HACC: Simulating Sky Surveys on State-of-the-Art Supercomputing Architectures. New Astronomy Journal, 2015.
- Phillips, C., Peterka, T., Karpeyev, D., Glatz, A.: Detecting Vortices in Superconductors: Extracting One-Dimensional Topological Singularities from a Discretized Complex Scalar Field. Physical Review E, 91, 023311, 2015.

- Heitmann, K., Habib, S., Finkel, H., Frontiere, N., Pope, A., Morozov, V., Rangel, S., Kovacs, E., Kwan, J., Li, N., Rizzi, S., Insley, J., Vishwanath, V., Peterka, T., Daniel, D., Fasel, P., Zagaris, G.: Large Scale Simulations of Sky Surveys. Computing in Science and Engineering, Sept.-Oct. 2014.
- Peterka, T., Croubois, H., Li, N., Rangel, S., Cappello, F.: Self-Adaptive Density Estimation of Particle Data. To appear SIAM Journal on Scientific Computing SISC Special Section on CSE15: Software and Big Data, 2015.
- Guo, H., Phillips, C., Peterka, T., Karpeyev, D., Glatz, A.: Extracting, Tracking, and Visualizing Vortices in 3D Complex-Valued Superconductor Simulation Data. IEEE Transactions on Visualization and Computer Graphics (TVCG), Proceedings of IEEE Vis 2015, Chicago, IL, 2015.

2014

- Nashed, Y., Vine, D., Peterka, T., Deng, J., Ross, R., Jacobsen, C.: Parallel Ptychographic Reconstruction. Optics Express Journal, Vol. 22, No. 26, 2014.
- Heitmann, K., Habib, S., Finkel, H., Frontiere, N., Pope, A., Morozov, V., Rangel, S., Kovacs, E., Kwan, J., Li, N., Rizzi, S., Insley, J., Vishwanath, V., Peterka, T., Daniel, D., Fasel, P., Zagaris, G.: Large Scale Simulations of Sky Surveys. Computing in Science and Engineering, Sept.-Oct. 2014.
- Jenkins, J., Dinan, J., Balaji, P., Peterka, T., Samatova, N., Thakur, R.: MPI Derived Datatypes Processing on Noncontiguous GPU-resident Data. IEEE Transactions on Parallel and Distributed Systems (TPDS), October 2014.

2013

- Leigh, J., Johnson, A., Renambot, L., Peterka, T., Jeong, B., Sandin, D., Talandis, J., Jagodic, R., Nam, S., Hur, H., Sun, Y.: Scalable Resolution Display Walls. Proceedings of the IEEE, Vol. 100, No. 1, January 2013.

2012

- Kendall, W., Huang, J., Peterka, T.: Geometric Quantification of Features in Large Unsteady Flow. Computer Graphics and Applications Special Issue on Extreme Scale Visual Analytics, Vol. 32, No. 4, 2012.

2011

- Knoll, A., Peterka, T., Hereld, M., Papka, M.E., Liu, B., Chan, M.K.Y., Greeley, J.: A Volumetric Framework for Registration, Analysis, and Visualization of Nanostructured Materials. Journal of Physics: Conference Series SciDAC 2011, 2011.
- Kendall, W., Huang, J., Peterka, T., Latham, R., Ross, R.: Visualization Viewpoint: Towards a General I/O Layer for Parallel Visualization Applications. IEEE Computer Graphics and Applications, 31(6), November/December, 2011.

2010

- Peterka, T., Kendall, W., Goodell, D., Nouanesengsey, B., Shen, H.-W., Huang, J., Moreland, K., Thakur, R., Ross, R.: Performance of Communication Patterns for Extreme-Scale Analysis and Visualization. Journal of Physics: Conference Series SciDAC 2010, 2010.

- Kendall, W., Glatter, M., Huang, J., Peterka, T., Latham, R., Ross, R.B.: Expressive Feature Characterization for Ultrascale Data Visualization. *Journal of Physics: Conference Series SciDAC* 2010, 2010.

2009

- Peterka, T., Ross, R. B., Shen, H.-W., Ma, K.-L., Kendall, W., Yu, H.: Parallel Visualization on Leadership Computing Resources. *Journal of Physics: Conference Series SciDAC* 2009, June 2009.

2008

- Ross, R. B., Peterka, T., Shen, H.-W., Hong, Y., Ma, K.-L., Yu, H., Moreland, K.: Parallel I/O and Visualization at Extreme Scale. *Journal of Physics: Conference Series SciDAC* 2008, July 2008.
- Peterka, T., Kooima, R., Sandin, D., Johnson, A., Leigh, J., DeFanti, T.: Advances in the Dynallax Solid-State Dynamic Parallax Barrier Autostereoscopic Visualization Display System. *IEEE Transactions on Visualization and Computer Graphics*, Vol. 14, No. 3, p. 487-499, May/June 2008.
- Ge, J., Sandin, D., Peterka, T., Kooima, R., Girado, J., and Johnson, A.: A Point-based Asynchronous Remote Visualization Framework for Real-time Virtual Reality. *International Journal of Image and Graphics*, Vol. 8, No. 2, p. 189-207, April 2008.

2006

- Peterka, T., Sandin, D., Ge, J., Girado, J., Kooima, R., Leigh, J., Johnson, A., Thiebaux, M., and DeFanti, T.: Personal Varrier: Autostereoscopic Virtual Reality for Distributed Scientific Visualization. *Future Generation Computing Systems*, 22, 2006.
- Leigh, J., Renambot, L., Johnson, A., Jeong, B., Jagodic, R., Schwarz, N., Svistula, D., Singh, R., Aguilera, J., Wang, Xi, Vishwanath, V., Lopez, B., Sandin, D., Peterka, T., Girado, J., Kooima, R., Ge, J., Long, L., Verlo, A., DeFanti, T., Brown, M., Cox, D., Patterson, R., Dorn, P., Wefel, P., Levy, S., Talandis, J., Reitzer, J., Prudhomme, T., Coffin, T., Davis, B., Wielinga, P., Stolk, B., Koo, G.B., Kim, J., Han, S., Kim, J.W., Corrie, B., Zimmerman, T., Boulanger, P., and Garcia, M.: The Global Lambda Visualization Facility: An Ultra-High-Definition Wide-Area Visualization Collaboratory. *Future Generation Computing Systems*, 22, 964-971, 2006.

2005

- Sandin, D., Margolis, T., Ge, J., Girado, J., Peterka, T., and DeFanti, T.: The Varrier TM Autostereoscopic Virtual Reality Display. *ACM Transactions on Graphics, Proceedings of ACM SIGGRAPH 2005* 24, no. 3: 894-903, 2005.

3.5 Refereed conference proceedings

2016

- Dreher, M., Peterka, T.: Bredala: Semantic Data Redistribution for In Situ Applications. *Proceedings of IEEE Cluster 2016*, Taipei, Taiwan, 2016.
- Dorier, M., Sisneros, R., Gomez, L. B., Peterka, T., Orf, L., Rahmani, L., Antoniu, G., Bouge, L.: Adaptive Performance-Constrained In Situ Visualization of Atmospheric Simulations. *Proceedings of IEEE Cluster 2016*, Taipei, Taiwan, 2016.

- Morozov, D., Peterka, T.: Efficient Delaunay Tessellation through K-D Tree Decomposition. Proceedings of SC16, Salt Lake City, UT, 2016.
- Morozov, D., Peterka, T.: Block-Parallel Data Analysis with DIY2. Proceedings of LDAV'16, Baltimore, MD, 2016.
- Rangel, E., Li, N., Habib, S., Peterka, T., Agrawal, A., Liao, W.-K., Choudhary, A.: Parallel DTFE Surface Density Field Reconstruction. Proceedings of IEEE Cluster 2016, Taipei, Taiwan, 2016.
- Guo, H., He, W., Peterka, T., Shen, H.-W., Collis, S., Helmus, J.: FTLE and LCS in Uncertain Unsteady Flows. Proceedings of Pacific Visualization 2016, Taipei, Taiwan, 2016.
- Guhur, P.-L., Zhang, H., Peterka, T., Constantinescu, E., Cappello, F.: Lightweight and Accurate Silent Data Corruption Detection in Ordinary Differential Equation Solvers. Proceedings of Euro-Par 2016.

2015

- Guo, H., Phillips, C., Peterka, T., Karpeyev, D., Glatz, A.: Extracting, Tracking, and Visualizing Vortices in 3D Complex-Valued Superconductor Simulation Data. IEEE Transactions on Visualization and Computer Graphics (TVCG), Proceedings of IEEE Vis 2015, Chicago, IL, 2015.
- Gu, Y., Wang, C., Peterka, T., Jacob, R., Kim, S. H.: Mining Graphs for Understanding Time-Varying Volumetric Data. IEEE Transactions on Visualization and Computer Graphics (TVCG), Proceedings of IEEE Vis 2015, Chicago, IL, 2015.
- Chen, S., Deng, J., Vine, D., Nashed, Y., Jin, Q., Peterka, T., Vogt, S., Jacobsen, C.: Simultaneous X-Ray Nano-Ptychographic and Fluorescence Microscopy at the Bionanoprobe. Proceedings of SPIE Conference on X-Ray Nanoimaging: Instruments and Methods II, San Diego, CA, 2015.
- Dorier, M., Dreher, M., Peterka, T., Wozniak, J., Antoniu, G., Raffin, B.: Lessons Learned from Building In Situ Coupling Frameworks. Proceedings of SC15 Workshop on In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization (ISAV), Austin, TX, 2015.

2014

- Peterka, T., Morozov, D., Phillips, C.: High-Performance Computation of Distributed-Memory Parallel 3D Voronoi and Delaunay Tessellation. Proceedings of SC14, New Orleans, LA, 2014.
- Lu, K., Shen, H.-W., Peterka, T.: Scalable Computation of Stream Surfaces on Large Scale Vector Fields. Proceedings of SC14, New Orleans, LA, 2014.
- Chaudhuri, A., Lee-T.-Y., Shen, H.-W., Peterka, T.: Efficient Indexing and Querying of Distributions for Visualizing Large-scale Data. Proceedings of IEEE PacificVis 2014, Yokohama, Japan.

2013

- Dorier, M., Sisneros, R., Peterka, T., Antoniu, G., Semeraro, D.: Damaris/Viz: A Nonintrusive, Adaptable, and User-Friendly In Situ Visualization Framework. Proceedings of 2013 Symposium on Large Data Analysis and Visualization, LDAV'13, Atlanta, GA.

- Woodring, J., Ahrens, J., Tautges, T., Peterka, T., Vishwanath, V., Geveci, B.: On-Demand Unstructured Mesh Translation for Reducing Memory Pressure During In Situ Analysis. Proceedings of SC13 Ultrascale Visualization Workshop, Denver, CO.
- Wozniak, J., Peterka, T., Armstrong, T., Dinan, J., Lusk, E., Wilde, M., Foster, I.: Dataflow Coordination of Data-Parallel Tasks via MPI 3.0. Proceedings of EuroMPI, Madrid, Spain, September 2013.

2012

- Peterka, T., Kwan, J., Pope, A., Finkel, H., Heitmann, K., Habib, S., Wang, J., Zagaris, G.: Meshing the Universe: Integrating Analysis in Cosmological Simulations. Proceedings of the SC12 Ultrascale Visualization Workshop, Salt Lake City, UT.
- Sewell, C., Meredith, J., Moreland, K., Peterka, T., DeMarle, D., Lo, Li-ta, Ahrens, J., Maynard, R., Geveci, B.: The SDAV Software Frameworks for Visualization and Analysis on Next-Generation Multi-Core and Many-Core Architectures. Proceedings of the SC12 Ultrascale Visualization Workshop, Salt Lake City, UT.
- Chaudhuri, A., Lee-T.-Y., Zhou, B., Wang, C., Xu, T., Shen, H.-W., Peterka, T., Chiang, Y.-J.: Scalable Computation of Distributions from Large Scale Data Sets. Proceedings of 2012 Symposium on Large Data Analysis and Visualization, LDAV'12, Seattle, WA.
- Peterka, T., Ross, R.: Versatile Communication Algorithms for Data Analysis. 2012 EuroMPI Special Session on Improving MPI User and Developer Interaction IMUDI'12, Vienna, AT.
- Nouanesengsy, B., Lee, T.-Y., Lu, K., Shen, H.-W., Peterka, T.: Parallel Particle Advection and FTLE Computation for Time-Varying Flow Fields. Proeedings of SC12, Salt Lake, UT.
- Habib, S., Morozov, V., Finkel, H., Pope, A., Heitmann, K., Kumaran, K., Peterka, T., Insley, J., Daniel, D., Fasel, P., Frontiere, N., Lukic, Z.: The Universe at Extreme Scale: Multi-Petaflop Sky Simulation on the BG/Q. Proceedings of SC12, Salt Lake, UT.
- Chau, D., McGinnis, B., Talandis, J., Leigh, J., Peterka, T., Knoll, A., Sumer, A., Papka, M., Jellinek, J.: A Simultaneous 2D/3D Autostereo Workstation. Proceedings of IS&T / SPIE SD&A XXII Conference, San Francisco, CA, 2012.

2011

- Moreland, K., Kendall, W., Peterka, T., Huang, J.: An Image Compositing Solution at Scale. Proceedings of SC11, Seattle, WA, 2011.
- Kendall, W., Wang, J., Allen, M., Peterka, T., Huang, J., Erickson, D.: Simplified Parallel Domain Traversal. Proceedings of SC11, Seattle, WA, 2011.
- Gyulassy, A., Peterka, T., Pascucci, V., Ross, R.: The Parallel Computation of Morse-Smale Complexes. Proceedings of IPDPS'12, Shanghai, China, 2012.
- Peterka, T., Ross, R., Kendall, W., Gyulassy, A., Pascucci, V., Shen, H.-W.: Scalable Parallel Building Blocks for Custom Data Analysis. Proceedings of Large Data Analysis and Visualization Symposium (LDAV'11), IEEE Visualization Conference, Providence, RI, 2011.

- Peterka, T., Ross, R., Nouanesengsey, B., Lee, T.-Y., Shen, H.-W., Kendall, W., Huang, J.: A Study of Parallel Particle Tracing for Steady-State and Time-Varying Flow Fields. Proceedings IPDPS'11, Anchorage, AK, 2011.

2010

- Kumar, S., Pascucci, V., Vishwanath, V., Carns, P., Latham, R., Peterka, T., Papka, M., Ross, R.: Towards Parallel Access of Multi-dimensional, Multi-resolution Scientific Data. SC10 Petascale Storage Workshop, New Orleans, LA, 2010.
- Kendall, W., Peterka, T., Huang, J., Shen, H.-W., Ross, R.: Accelerating and Benchmarking Radix-k Image Compositing at Large Scale. Proceedings of EG PGV'10, Norrkoping, Sweden, May 2010.

2009

- Peterka, T., Goodell, D., Ross, R., Shen, H.-W., Thakur, R.: A Configurable Algorithm for Parallel Image-Compositing Applications. Proceedings of SC09, Portland OR, November 2009.
- Kendall, W., Glatter, M., Huang, J., Peterka, T., Latham, R., Ross, R.: Terascale Data Organization for Discovering Multivariate Climatic Trends. Proceedings of SC09, Portland, OR, November 2009.
- Hong, Y., Peterka, T., Shen, H.-W.: Histogram-based I/O Optimization for Visualizing Large-scale Data. Proceedings of SC09 Ultrascale Visualization Workshop, Portland, OR, November 2009.
- Peterka, T., Yu, H., Ross, R., Ma, K.-L., and Latham, R.: End-to-End Study of Parallel Volume Rendering on the IBM Blue Gene/P. Proceedings of ICPP'09 Conference, Vienna, Austria, September 2009.
- Peterka, T., Ross, R., Yu, H., Ma, K.-L., Kooima, R., and Girado, Javier: Autostereoscopic Display of Large-Scale Scientific Visualization. Proceedings of IS&T / SPIE SD&A XX Conference, San Jose, CA, January 2009.

2008

- Peterka, T., Ross, R., Yu, H., Ma, K.-L.: Assessing Improvements to the Parallel Volume Rendering Pipeline at Large Scale. Proceedings of SC08 Ultrascale Visualization Workshop, Austin, TX, November 2008.
- Peterka, T., Yu, H., Ross, R., Ma, K.-L.: Parallel Volume Rendering on the IBM Blue Gene/P. Proceedings of Eurographics Symposium on Parallel Graphics and Visualization 2008 (EGPGV08) Crete, Greece, April 2008.

2007

- Peterka, T., Kooima, R., Girado, J., Ge, J., Sandin, D., Johnson, A., Leigh, J., Schulze., J., and DeFanti, T.: Dynallax: Solid State Dynamic Barrier Autostereoscopic VR Display. IEEE VR 2007 Conference Proceedings, 2007.
- Peterka, T., Kooima, R., Girado, J., Ge, J., Sandin, D., and DeFanti, T.: Evolution of the Varrier Autostereoscopic VR Display: 2001-2007. IS&T / SPIE Electronic Imaging 2007 Conference Proceedings, 2007.

- Girado, J., Peterka, T., Kooima, R., Girado, J., Ge, J., Sandin, D., Johnson, A., Leigh, J., and DeFanti, T.: Real Time Neural Network-based Face Tracker for VR Displays. Trends and Issues in Tracking for Virtual Environments Workshop at the IEEE VR 2007 Conference, 2007.
- Kooima, R., Peterka, T., Girado, J., Ge, J., Sandin, D., and DeFanti, T.: A GPU Sub-pixel Algorithm for Autostereoscopic Virtual Reality. IEEE VR 2007 Conference Proceedings, 2007.
- Leigh, J., Johnson, A., Renambot, L., Sandin, D., DeFanti, T., Brown, M., Jeong, B., Jagodic, R., Krumbholz, C., Svistula, D., Hur, H., Kooima, R., Peterka, T., Ge, J., and Falk, C.: "Emerging from the CAVE: Collaboration in Ultra High Resolution Environments," First International Symposium on Universal Communication, Kyoto, Japan, June 14-15, 2007.

2006

- Ge, J., Sandin, D., Johnson, A., Peterka, T., Kooima, R., Girado, J., and DeFanti, T.: Point-Based VR Visualization for Large-Scale Scientific Datasets by Real-Time Remote Computation. Proceedings of ACM VRCIA 2006 Conference, 2006.

2005

- Ge, J., Sandin, D., Peterka, T., Margolis, T., and DeFanti, T.: Camera Based Automatic Calibration for the VarrierTM System. Proceedings of ProCams 2005, IEEE International Workshop on Projector-Camera Systems, 2005.

3.6 Unrefereed conference proceedings

N/A

3.7 Technical reports

- Cappello, F., Peterka, T.: The Need for Resilience Research in Workflows of Big Compute and Big Data Scientific Applications. Big Data and Extreme Computing (BDEC) 2014 Report, Fukuoka, Japan, 2014.
- Cappello, F., Constantinescu, E., Hovland, P., Peterka, T., Phillips, C., Snir, M., Wild, S.: Improving the Trust in Results of Numerical Simulations and Scientific Data Analytics. Argonne technical report ANL/MCS-TM-352, 2015.

3.8 Other publications

Ph.D. Dissertation

- Peterka, T.: Dynallax: Dynamic Parallax Barrier Autostereoscopic Display. Ph.D. dissertation, University of Illinois at Chicago, Chicago, 2007.

M.S. Thesis

- Peterka, T.: Scientific Visualization of N-Dimensional Attainable Regions. Master's thesis, University of Illinois at Chicago, Chicago, 2003.

Posters

2016

- Peterka, T., Guo, H., He, W., Shen, H.-W., Nouanesengsy, B., Lu, K., Collis, S., Helmus, J., Lee, T.-Y., Kendall, W., Huang, J., Chaudhuri, A.: Time-Varying Flow Analysis and Visualization for Climate Science. BER/ASCR AXICCS Workshop, September 12-13, Rockville, MD.

2015

- Peterka, T., Lofstead, J., Cappello, F., Widener, P., Isaila, F., Rahmani, L., Croubois, H., Aupy, G.: High-Performance Decoupling of Tightly Coupled Data Flows. Scientific Data Management, Analysis, and Visualization PI Meeting, Walnut Creek, CA, January 2015.
- Peterka, T., Morozov, D., Phillips, C., Nashed, Y., Shen, H.-W., Nouanesengsy, B.: DIY Applications. SDAV All-Hands Meeting, Santa Fe, NM, March 2015.
- Nashed, Y., Vine, D., Peterka, T., Deng, J., Ross, R., Jacobsen, C.: PtychoLib: Parallel Ptychographic Reconstruction. SIAM Conference on Computational Science and Engineering, Salt Lake City, March 2015.
- Peterka, T., Morozov, D., Phillips, C., Nashed, Y., Shen, H.-W., Nouanesengsy, B.: Large-Scale Parallel Analysis of Applications with the DIY Library. SciDAC PI Meeting, Bethesda, MD, July 2015.
- Guo, H., Phillips, C., Peterka, T., Karpeyev, D., Glatz, A.: Extracting, Tracking, and Visualizing Magnetic Flux Vortices in Complex-Valued Superconductor Simulation Data. SciDAC PI Meeting, Bethesda, MD, July 2015.
- Sasikumar, K., Narayanan, B., Deshmukh, S., Sankaranarayanan, S., Harder, R., Maxey, E., Ferrier, N., Peterka, T., Ulvestad, A.: Investigation of Lattice Displacement Dynamics and Nanocatalytic Activity of Gold. International Symposium on Clusters and Nanomaterials, Richmond, VA, October 2015.

2014

- Peterka, T., Morozov, D., Kwan, J., Pope, A., Finkel, H., Heitmann, K., Habib, S., Zagaris, G., Geveci, B., Liao, W.-K., Choudhary, A.: Meshing the Universe: In Situ Voronoi and Delaunay Tessellation. SDAV All All Hands Meeting, Atlanta, GA, February 2014.
- Phillips, C., Peterka, T., Glatz, A., Karpeyev, D.: Detecting Vortices in a Structured Finite Element Model of High-Temperature Superconductors. Conference on Data Analysis, CoDA, Santa Fe, NM, March 2014.
- H. Shen, T. Lee, A. Chaudhuri, K. Lu, T. Peterka: Vector Field Data Summarization and Exploration. SciDAC PI Meeting, Washington DC, July 2014.
- C. Phillips, T. Peterka, D. Karpeev, A. Glatz: OSCon: Detecting Vortices in a Structured Finite Element Model of High-Temperature Superconductors. SciDAC PI Meeting, Washington, DC, July 2014.

2013

- Chaudhuri, A., Lee-T.-Y., Shen, H.-W., Peterka, T.: Efficient Range Distribution Query in Large-Scale Scientific Data. Best Poster Proceedings of 2013 Symposium on Large Data Analysis and Visualization, LDAV'13, Atlanta, GA. October 2013.

- Peterka, T., Vishwanath, V., Insley, J., Kwan, J., Pope, A., Finkel, H., Heitmann, K., Habib, S., Woodring, J., Sewell, C., Ahrens, J., Zagaris, G., Maynard, R., Geveci, B., Liao, W.-K., Potwary, M., Agrawal, A., Sehrish, S.: Exploring Cosmology with SDAV Technologies. SciDAC PI meeting, Rockville, MD, July 2013.
- Peterka, T., Kwan, J., Pope, A., Finkel, H., Heitmann, K., Habib, S., Wang, J., Zagaris, G.: Meshing the Universe: Integrating Analysis in Cosmological Simulations. SDAV All Hands Meeting, San Francisco, CA. February 2013.

2012

- Chaudhuri, A., Lee-T.-Y., Shen, H.-W., Peterka, T., Wang, C., Xu, T., Zhou, B., Chiang, Y.-J.: An Information-Theoretic Framework for Enabling Extreme-Scale Science Discovery. ASCR/ASC Exascale Research PI Meeting, Crystal City, VA. October 2012.
- Chau, D., McGinnis, B., Talandis, J., Leigh, J., Peterka, T., Knoll, A., Sumer, A., Papka, M., Jellinek, J.: A Simultaneous 2D/3D Autostereo Workstation. IS&T / SPIE SD&A XXIII Conference, San Francisco, CA, January 2012.
- Chaudhuri, A., Lee-T.-Y., Shen, H.-W., Peterka, T., Wang, C., Xu, T., Zhou, B., Chiang, Y.-J.: Exploring Large Scale Scientific Data Using Information Theory. Conference on Data Analysis, Santa Fe, NM, February 2012.
- Takle, J., Heitmann, K., Peterka, T., Silver, D., Zagaris, G., Habib, S.: Tracking and Visualizing Evolution of the Universe: In Situ Parallel Dark Matter Halo Merger Trees. SC12, Salt Lake City, UT, November 2012.
- Peterka, T., Vishwanath, V., Insley, J., Habib, S., Heitmann, K., Zagaris, G., Geveci, B., Wang, J., Takle, J., Woodring, J., Ahrens, J., Liao, W.-K., Sehrish, S., Loring, B., Weber, G., Bethel, W.: The Visual and Numerical Analysis of Large-Scale Structures in Cosmology and Astrophysics. SciDAC PI Meeting, Rockville, MD, September 2012.
- Ahrens, J., Sewell, C., Patchett, J., Bethel, W., Brugger, E., Geveci, B., Ma, K.-L., Joy, K., Childs, H., Moreland, K., Pascucci, V., Potter, K., Hansen, C., Shen, H.-W., Peterka, T.: Technologies for Scientific Visualization. SciDAC PI Meeting, Rockville, MD, September 2012.
- Agrawal, A., Bethel, W., Bremer, P.-T., Childs, H., Choudhary, A., Gyulassy, A., Joy, K., Liao, W.-K., Ma, K.-L., Pascucci, V., Peterka, T., Patwary, M., Ross, R., Rubel, O., Vatsavai, R.: Advanced Data Analysis Techniques for Science Discovery. SciDAC PI Meeting, Rockville MD, September 2012.

2011

- Knoll, A., Peterka, T., Hereld, M., Papka, M. E., Liu, B., Chan, M., Greeley, J.: A Volumetric Framework for Registration, Analysis, and Visualization of Nanostructured Materials. SciDAC 2011 Conference, Denver, CO, July 2011.
- Shen, H.-W., Peterka, T., Ross, R., Chiang, Y.-J.: An Information-Theoretic Framework for Enabling Extreme-Scale Science Discovery. ASCR Exascale Research Kickoff Meeting, San Diego, CA, March, 2011.

2010

- Kendall, W., Glatter, M., Huang, J., Peterka, T., Latham, R., Ross, R.B.: Expressive Feature Characterization for Ultrascale Visualization. SciDAC '10, Chattanooga, TN, July 2010.
- Peterka, T., Ross, R., Shen, H.-W., Kendall, W., Huang, J., Goodell, D., Thakur, R.: Radix-k: Large-Scale Parallel Image Compositing for Sort-Last Rendering. SciDAC '10, Chattanooga, TN, July 2010.

2009

- Peterka, T., Ross, R., Shen, H.-W., Ma, K.-L., Kendall, W., Yu, H.: Parallel Visualization on Leadership Computing Resources. SciDAC '09, San Diego, CA, June 2009.

2008

- Hereld, M., Insley, J., Olson, E., Papka, M., Peterka, T., Ross, R., Uram T: Introducing the Argonne Leadership Computing Facility Analysis Environment. ASCR PI Meeting, Denver, CO, April 2008.

3.9 Invited talks presented at major conferences and symposia

2016

- 6/24/16, EDF-INRIA Big Data Seminar, Paris, France: Distributed Data Analysis at Scale.
- 8/4/16, JSM Analysis, Storage, and Privacy for Big Data Seminar, Chicago IL: Distributed Data Analysis at Scale.
- 8/11/16, Modsim Workshop, Seattle, WA: ModSim Challenges for In Situ Workflows.

2015

- 1/13/15, Scientific Data Management, Analysis, and Visualization PI Meeting, Walnut Creek, CA: High-Performance Decoupling of Tightly Coupled Data Flows.
- 3/4/15, SDAV AHM, Santa Fe, NM: DIY Applications.
- 3/18/15, SIAM CSE'15, Salt Lake City, UT: Block-Based Analysis of Scientific Data.
- 6/30/15, JLESC 2015, Barcelona, Spain: Data Model and Data Redistribution for In Situ Applications with Decaf (copresented with Matthieu Dreher).
- 11/17/15, SC BOF on Characterizing Extreme-Scale Computational and Data-Intensive Workflows, Austin TX: Workflows Combining Simulation and Experiment.

2014

- 3/5/14, Conference on Data Analysis CoDA, Santa Fe, NM: Adaptive Density Estimation of Particle Data.
- 4/29/14, HPC-Geospatial Analysis Workshop, Argonne, IL: High-Performance Analytics with Potential Application to Geospatial Data.
- 9/30/14, First Imaging Initiative Workshop: Tomography and Ptychography, Argonne, IL: Imaging Meets HPC Through Scalable Data Analysis.

- 11/20/14, SC14, New Orleans, LA: High-Performance Computation of Distributed Memory Parallel 3D Voronoi and Delaunay Tessellation.
- 11/24/14, JLESC 2014, Chicago, IL: From Particles to Meshes to Grids: Data Movement Within and Between Analysis Codes.

2013

- 4/24/13, DOE Computer Graphics Forum, Portland, OR: Benchmarking Performance of Data Analysis Communication Algorithms.
- 6/14/13, Workshop on Large-Scale Data Analysis Using Topology and Statistics, Le Barp, France: Infrastructure for Topological (and Statistical) Analysis of Extreme-Scale Data.
- 6/17/13, Dagstuhl Seminar on Parallel Data Analysis, Wadern, Germany: Do-It-Yourself Parallel Data Analysis.
- 10/13/13, IEEE Visualization Tutorial, Atlanta, GA: Foundations of Data-Parallel Particle Advection.
- 10/14/13, IEEE Vis Large Data Analysis and Visualization Symposium, Atlanta, GA: Portable Data-Parallel Visualization and Analysis in Distributed Memory Environments. Presented on behalf of Chris Sewell, LANL.

2012

- 7/25/12, CScADS Workshop on Leadership Computing Platforms, Extreme-scale Applications, and Performance Strategies, Snowbird, UT: Parallel I/O in Practice.
- 7/25/12, CScADS Workshop on Leadership Computing Platforms, Extreme-scale Applications, and Performance Strategies, Snowbird, UT: Visualization and Data Analysis Tools.
- 7/31/12, CScADS Workshop on Data-Intensive Science, Snowbird, UT: In Situ Data Analysis.
- 11/12/12, SC Ultrascale Visualization Workshop, Salt Lake, UT: Meshing the Universe: Integrating Analysis in Cosmological Simulations.

2011

- 5/18/11, IPDPS '11, Anchorage, AK: A Study of Parallel Particle Tracing for Steady-State and Time-Varying Flow Fields.
- 7/26/11, CScADS Summer Workshop Series, Tahoe City, CA: Data Movement Support for Analysis.
- 10/24/11, Large Data Analysis and Visualization Symposium (LDAV 2011), Providence, RI: Scalable Parallel Building Blocks for Custom Data Analysis.

2010

- 2/26/10, SIAM PP '10, Seattle, WA: Moving Analysis to the Data: Scalable Visualization Using Simulation Resources.
- 4/12/10, DOE CGF'10, Park City, UT: Revisiting Large Scale Parallel Image Compositing for Sort Last Rendering.

- 4/13/10, DOE CGF'10, Park City, UT: Elements of Scalable Data Analysis and Visualization.
- 7/22/10, CScADS Summer Workshop Series, Snowbird, UT: Visualization and Data Analysis: Past, Present, and Future.
- 9/13/10, Adler Planetarium Research Division Colloquium, Chicago, IL: Data Analysis and Visualization: From Galileo's Telescope to Exascale Computing.
- 11/15/10, SC10 Ultrascale Visualization Workshop, New Orleans, LA: Scalable Software Components for Ultrascale Visualization Applications. (copresented with Wes Kendall)

2009

- 1/19/09, SPIE SD&A XX Conference, San Jose, CA: Autostereoscopic Display of Large-Scale Scientific Visualization
- 4/20/09, DOE Computer Graphics Forum, Monterey, CA: Virtual Environments for Visualization
- 8/6/09, CScADS Analysis & Visualization Workshop, Lake Tahoe, CA: Factors in Large Scale Parallel Visualization.
- 9/25/09, Vienna, Austria, ICPP 2009 Conference: End-to-End Study of Parallel Volume Rendering on the IBM Blue Gene/P.
- 11/16/09, SC09 Ultrascale Visualization Workshop, Portland, OR: Histogram-based I/O Optimization for Visualizing Large-Scale Data.
- 11/17/09, SC09, Portland, OR: A Configurable Algorithm for Parallel Image-Compositing Applications.
- 11/17/09, SC09 Indiana University Miniworkshop, Portland, OR: Virtual Environments for Visualization of Large Scale Scientific Data.

2008

- 3/14/08, Ultrascale Visualization Mini-Symposium at SIAM PP08, Atlanta, GA: Visualization on Leadership Computing Resources
- 4/15/08, EGPGV08 Symposium, Crete, Greece: Parallel Volume Rendering on the IBM Blue Gene/P
- 4/28/08, DOE CGF08, Outer Banks, NC: Massively Parallel Visualization on Leadership-Class Architecture
- 6/7/08, IWSV08 Workshop, Kos, Greece: Coupling Massively Parallel Volume Rendering with Autostereoscopic 3D Display Environments
- 7/31/08, Scientific Data Analysis and Visualization for Petascale Computing Workshop, July 28 - 31, Snowbird, UT: Recent Advances in Volume Rendering
- 11/16/08, Supercomputing 2008 Ultrascale Visualization Workshop, Austin, Texas: Assessing and Improving Large-Scale Parallel Volume Rendering on the IBM Blue Gene/P

2007

- 1/29/07, SPIE SD&A XVIII Conference, San Jose, CA: Evolution of the Varrier Autostereoscopic Display: 2001-2007
- 3/14/07, IEEE VR Conference, Charlotte, NC: Dynallax: Solid State Dynamic Parallax Barrier Autostereoscopic VR Display

3.10 Other talks

2016

- 3/21/16, Imaging Initiative Seminar, Argonne IL: MAUI: Modeling, Analysis, and Ultrafast Imaging.
- 3/24/16, Kitware Seminar, Clifton Park NY: Reducing the Cost of Data Movement in Exascale Analytics.

2014

- 2/26/14, SDAV All Hands Meeting, Atlanta, GA: Meshing the Universe: In Situ Voronoi and Delaunay Tessellation.
- 3/4/14, LANL seminar, Los Alamos, NM: Adaptive Density Estimation of Particle Data.
- 8/1/14, Argonne Training Program on Extreme Scale Computing, St. Charles, IL: DIY Parallel Data Analysis.

2013

- 2/21/13, SDAV All Hands Meeting, San Francisco, CA: Meshing the Universe: Integrating Analysis in Cosmological Simulations.
- 3/13/13, LANS seminar, Argonne, IL: DIY Parallel Data Analysis.
- 7/18/13, Student Summer Lecture Series, Argonne, IL: Do-It-Yourself Parallel Data Analysis.
- 8/6/13, Argonne Training Program on Extreme Scale Computing, St. Charles, IL: Do-It-Yourself Parallel Data Analysis.

2012

- 1/19/12, CESAR All-hands meeting, Argonne, IL: Data Analysis, Visualization, and Storage, Part 1.
- 2/28/12, LANL Seminar, Los Alamos, NM: Do-It-Yourself Data Analysis: Selected Topics and Recent Adventures.
- 4/16/12, ASCR/ASC PI meeting, Portland, OR: Position Statement: File Systems, I/O, Data Management, and Data Analysis.
- 6/27/12, Alcatel-Lucent visit, Argonne, IL: Data: Models, Storage, Analysis, and Movement.
- 1/27/11, Exascale Software Center Next Steps Planning Meeting, Argonne, IL: Nuclear Engineering Codesign Applications.

2011

- 4/4/11, Argonne Strategic Initiatives Collaboration Workshop: Opportunities in Electrical Energy Storage, Argonne, IL: Scalable Parallel Building Blocks for Custom Data Analytics.
- 9/16/11, CESAR Kickoff Meeting, Argonne, IL: Data Modeling, Storage, and Analysis in CESAR.
- 10/13/11, University of Tennessee EECS departmental seminar, Knoxville, TN: Scalable Parallel Building Blocks for Custom Data Analysis.
- 11/16/11, SC11 booth talk, Seattle, WA: Do-It-Yourself Data Analysis.

2010

- 6/9/10, Argonne MCS LANS Seminar Series, Argonne, IL: Scalable Data Analysis.

2009

- 5/15/09, EVL Graduate Student Workshop, Chicago, IL: So You Went and Got Yourself a PhD.
- 6/16/09, Calit2, San Diego, CA: Approaches to Data-intensive Scientific Visualization.
- 10/7/09, Purdue University, W. Lafayette, IN: Scalable Approaches to Analysis of Scientific Data.
- 10/8/09, The Ohio State University, Columbus, OH: Scalable Approaches to Analysis of Scientific Data.
- 2/20/08, Postdoc association brown bag seminar, ANL: Novel Approaches to Visualization

2008

- 9/10/08, Electronic Visualization Laboratory, University of Illinois at Chicago: Massively Parallel Visualization on Leadership Computing Resources
- 9/11/08, Postdoctoral Research Symposium, September 11 - 12, Argonne, IL: Massively Parallel Visualization on Leadership Computing Resources
- 10/16/08, Los Alamos National Laboratory, Los Alamos, NM: Visualization on a Supercomputer: A Case Study of Parallel Volume Rendering on Blue Gene/P
- 11/6/08, University of Chicago Computation Institute, Argonne, IL: Ultrascale Visualization: A Case Study of Parallel Volume Rendering on Blue Gene/P

3.11 Software and equipment developed

- *Diy*¹ provides configurable data partitioning, scalable data exchange, and efficient parallel I/O in a library that assists developers in parallelizing data analysis by providing efficient high-performance data movement algorithms on top of MPI. In collaboration with Dmitriy Morozov of LBNL.
- *Tess*² is a distributed-memory parallel Delaunay and Voronoi tessellation library that parallelizes existing serial computational geometry tools over a spatial decomposition of input particles. In collaboration with Dmitriy Morozov of LBNL.
- *Cian*³ is a suite of proxy applications developed under the CESAR co-design project to benchmark coupling, analysis, visualization, and communication in data analysis tasks at exascale.
- *Decaf*⁴ provides a hybrid combination of tight and loose coupling between simulations and analysis

¹<https://github.com/diatomic/diy2>

²<https://github.com/diatomic/tess2>

³<https://github.com/tpeterka/cian2>

⁴<https://bitbucket.org/tpeterka1/decaf>

tasks at large scale.

3.12 Patents and innovations

- Title: System and Methods for Visualizing Information. Inventors: Andrew Johnson, Jason Leigh, Maxine Brown, Tom Peterka, Daniel Sandin, Lance Long, Luc Renambot, Jonas Talandis. US Utility Patent Application No.: 13/916,555. Date: 6/12/2012.

3.13 Other

N/A

4 Funding

4.1 Research proposals funded

- Title: ALETHEIA: A Framework for Automatic Detection of Corruption in Extreme-Scale Scientific Applications. Source: NSF. Award Amount: \$450K. Award Period: 10/01/2016 - 09/30/2019. Location: University of Illinois. PI: Marc Snir, proposal effort 30%.
- Title: Image Reconstruction of Ptychographic Diffraction Patterns in Light Source Facilities, Award Amount: \$200K/yr (100% ANL), Award Period: 2015 - 2016, Location: ANL, PI: Tom Peterka, proposal effort 80%
- Title: High Performance Decoupling of Tightly-Coupled Data Flows, Award Amount: \$637.5K/yr (\$437.5K/yr ANL), Award Period: 2014 - 2017, Location: Argonne National Laboratory, PI: Tom Peterka, proposal effort 80%
- Title: Integrated Imaging, Modeling, and Analysis of Ultrafast Energy Transport in Nanomaterials, Award Amount: \$395K/yr (100% ANL), Award Period: 2014 - 2017, Location: ANL, PI: Tom Peterka, proposal effort 80%
- Title: Extreme-Scale Distribution-Based Data Analysis, Award Amount: \$425K/yr (\$106K/yr ANL), Award Period: 2014 - 2017, Location: The Ohio State University, PI: Han-Wei Shen, proposal effort 30%
- Title: An Information-Theoretic Framework for Enabling Extreme-Scale Science Discovery, Source: DOE, Award Amount: \$400K/year (\$155K/yr ANL), Award Period: 10/01/2010-09/30/2013, Location: The Ohio State University, PI: Han-Wei Shen, proposal effort 50%
- Title: Converting Material Interface Data into Discoveries in Energy Sciences, Source: DOE Office of Science, Award Amount: \$400K/yr (100% ANL), Award Period: 4/1/2010 - 9/30/2011, Location: Argonne, PI: Rob Ross, proposal effort 60%